MINOR NOTICES.

THE FIRST SUPPLEMENT to Paris's *Index Bryologicus* has been issued by the house of Georg & Cie, Geneva, as one of the *Mémoires de l'Herbier Boissier*. It contains 234 pages, with innumerable entries correcting and adding to the original *Index*.—C. R. B.

THE FOURTH PART of the new edition of Weisner's *Die Rohstoffe des Pflanzenreiches*[5] completes the account of plant fats (42 pp.); Dr. K. Mikosch treats vegetable wax (21 pp.); Dr. A. E. von Vogl writes the tenth section on camphor (6 pp.); Dr. S. Zeisel contributes the chapter on starch (80 pp.); and Dr. Lafar's section on yeast is begun (11 pp.)—C. R. B.

THE SECOND FASCICLE of the list of the genera of seed plants, according to the system of Engler, has appeared with remarkable promptness.[6] In the notice of the first part in this journal[7] the general character of the work was stated. In the present signatures 1220 genera are listed, bringing the number up to 2490, the list beginning with *Alophia* (Iridaceæ) and ending with *Silene* (Caryophyllaceæ).— J. M. C.

RECENT NUMBERS of Engler's *Die natürlichen Pflanzenfamilien* are as follows: Number 198 contains a continuation of *Musci*, by Carl Müller and W. Ruhland, and deals as yet with the general morphological characters of the group. Number 199 contains the conclusion of the Marattiaceæ by G. Bitter, the Ophioglossaceæ by the same author, and a general discussion of fossil Filicales by H. Potonié. Number 200 and 201 (a double number) contains the completion of the Hyphomycetes, by G. Lindau, and with it the completion of the part of the first volume which deals with the Fungi.—J. M. C.

DR. J. P. LOTSY gives a résumé in English[8] of several articles in German and Dutch, in which he has published the results of his investigations upon the localization and formation of alkaloids in Cinchona. The chief results may be stated briefly thus. Normally, alkaloid is present exclusively as the content of living parenchyma cells, or of other cells differing but little from parenchyma. It never occurs in cells containing oxalic acid (as oxalate). Usually it is dissolved in the cell sap in young organs, but is an amorphous solid in old parts. The alkaloid is formed in the leaves and transported to the bark, where it is stored either in its original form or, after transformation

[5] Pp. 481–640, *figs. 89–122*. Leipzig: Wilhelm Engelmann. *M 5*. See BOT. GAZ. 30: 66. 1900.

[6] DALLA TORRE, C. G. DE, and HARMS, H.: Genera Siphonogamarum ad systema Englerianum conscripta. Fasiculus secundus (signatura 11–20). Small 4to, pp. 81–160. Leipzig: Wilhelm Engelmann. 1900. *M.* 4.

[7] BOT. GAZ. 30: 67. 1900.

[8] Bulletin de l'Institut botanique de Buitenzorg. III. 8vo, pp. 43.

to another alkaloid. It is considered not at all impossible that the alkaloid is formed by direct synthesis, and not as a decomposition product of proteids.—C. R. B.

A SMALL PAMPHLET by W. Johannsen presents an account in popular form of a process which has already attained considerable use in forcing-houses.[9] The method, which extraordinarily hastens the development of shoots and flowers, consists in exposing dormant plants in a suitable chamber twice to ether vapor for 24–72 (mostly 48) hours, with 48 hours interval, the time depending on the temperature and phase of the resting period.

The first section, "Zur Orientirung über die Ruheperiod," has considerable theoretical interest. The author defines clearly the expression "resting period," and shows the erroneousness of the common idea that the riper the wood or seed of a plant is, the easier will be the budding or sprouting. He points out that the resting period has no sharp limits, but is a passage from diminished power of growth through complete rest to increased power of growth again.

In the second section detailed directions are given for the practice, which is especially applicable to syringas, azaleas, snowball, spireas, deutzia, lily of the valley, and tulips.—C. R. B.

THE FIELD COLUMBIAN MUSEUM has recently come into possession of a set of plants collected by Don José Blain on the Isle of Pines, Cuba, some time in the middle of the sixties. The list, including 185 numbers, among which are four new species (*Polygala*, *Salacia*, *Spigelia*, and *Heliotropium*), has appeared as one of the publications of the museum (1:425–439. 1900), under the title "Plantae Insulae Ananasensis," by Charles F. Millspaugh, the curator.— The same author has also issued a second paper under the title "Plantae Utowanae"(Field Columb. Mus. Bot. 2:113–135. 1900), in which he reconsiders the Cyperaceæ and Cakile of the former one (see BOT. GAZ. 29:360. 1900). The present paper takes up the two groups in the form to be used in the proposed *Yucatan Flora*, in which all of the specific descriptions are to be based upon the characters of the fruits, and accompanied by text cuts illustrating these characters. Dr. Millspaugh differs from C. B. Clarke in regarding Mariscus and Torulinium as but sections of Cyperus. In *Cakile* *Cyperus* (Mariscus) *Caymanensis* is described as a new species. ten species are recognized, two of which are new; also two new hybrids are described. The author makes the very interesting observation that the genus has laid special stress upon the development of the fruit for dissemination, and that the "evolution for floatage seems to have reached its height in the new species growing upon the Alacran shoals."—J. M. C.

[9] JOHANNSEN, W.: Das Aether-Verfahren beim Frühtreiben mit besonderer Berücksichtgiung der Fliedertreiberei. 8vo., pp. 28, *figs. 4.* Jena: Gustav Fischer. 1900. 80 pfg.

STIGMONOSE is the title of a bulletin by Albert F. Woods[10] in which he describes fully his studies of the disease of carnations and other pinks, formerly called bacteriosis by Arthur and Bolley, and ascribed by them to the action of *Bacterium dianthi*. The preliminary statement by Mr. Woods as to the cause of the disease and the tone of his criticisms on Arthur and Bolley's work[11] were criticised by this journal[12]. Mr. Woods has now presented the evidence on which his conclusions rest, and it entirely justifies the substance of his criticism. Moreover, the account of Arthur and Bolley's work in the bulletin is full, and the defects in it are pointed out in a way to which no exception can be taken.

Woods shows that neither fungi nor bacteria are present in the earlier stages of the disease, and though they may appear later, their presence is not constant. The punctures by aphides are responsible for the disease, as was shown repeatedly by colonizing aseptically these insects on carnations. As "bacteriosis" is misleading, stigmonose is suggested to replace it. Mr. Woods believes "that the insect injects some irritating substance of an acid or enzymic nature into the wound; that this substance causes the increase of oxidizing enzymes in the cells which it reaches, and that these enzymes interfere with the nutrition of the cell by destroying the chlorophyll and setting up other changes which finally result in death."—C. R. B.

A FRENCH TEXT on the anatomy and physiology of plants by Er. Belzung[13] shows that one can produce a very imposing and attractive looking book without contributing to the pedagogical advancement of a subject. The author is professor of natural sciences in the Lycée Charlemagne, and the author of various elementary text-books, two geological, one paleozoological, and one botanical, and one zoological, which have reached third and fourth editions. A corresponding work on the anatomy and physiology of animals has reached its eighth edition.

The author disclaims having written a treatise, but calls his book a work for the student in which he may obtain the fundamentals to prepare him for the study of completer works. But he will be an unfortunate student who bases his knowledge on such a book as this. Not that it is so full of errors, though it sins in this respect, but its correctness is purely mechanical. Moreover, erroneous impressions and ill-chosen points of view unfit it for its

[10] WOODS, A. F.: Stigmonose, a disease of carnations and other pinks. Bulletin 19, U. S. Dept. Agric., Div. of Veg. Phys. and Path. 8vo, pp. 30. *pl. 3*. Washington: Gov. Printing Office. 1900.

[11] A. A. A. S., Toronto meeting; see BOT. GAZ. **24**: 200–205. 1897.

[12] BOT. GAZ. **25**: 129–130. 1898.

[13] BELZUNG, ER.: Anatomie et physiologie végétales, al'usage des étudiants en sciences naturelles des universités, des élèves a l'institut agronomique, des écoles d'agriculture, etc. 8vo, pp. iv + 1320, *figs. 1699*. Paris: Felix Alcan. 1900.

announced purpose. For example, the "circulation" of the sap is repeatedly described and impressed by a diagram with arrows showing the direction of the "ascending sap" and the "descending sap." The "osmotic force" is presented as "une nouvelle force," residing in the protoplasm in virtue of which it exercises "une puissante attraction." Many other similar cases might be cited from all sections.

The best thing about the book is the illustrations, most of which are excellent. But as a whole it can hardly be commended.—C. R. B.

A NEW PART (second series, Part IV) of the *Minnesota Botanical Studies* has appeared, bearing the date August 15, 1900. It contains seven papers of varying length, and is altogether a worthy member of the series. "A contribution to the knowledge of the flora of southeastern Minnesota," by W. A. Wheeler, is in the nature of a report of the work of the State Botanical Survey during the summer of 1899, and the results are presented with a well-organized ecological background, accompanied by seven excellent plates from photographs showing characteristic vegetation features. "The seed and seedling of the western larkspur (*Delphinium occidentale*)," by Francis Ramaley, is a brief morphological and histological study, illustrated by a plate. "A preliminary list of Minnesota Erysipheæ," by E. M. Freeman, catalogues nineteen species, with their hosts. K. C. Davis publishes three important revisions which have been developed in connection with the work on Professor L. H. Bailey's *Cyclopedia of American Horticulture*. They are as follows: "Native and garden Delphiniums of North America," 52 species being described, one of which is new; "Native and cultivated Ranunculi of North America and segregated genera," the genera being *Batrachium* S. F. Gray (5 spp.), *Ranunculus* L. (96 spp., two new), *Kumlienia* Greene (1 sp.), *Ficaria* Huds. (1 sp.), *Cyrtorhyncha* Nutt. (1 sp.), *Arcteranthis* Greene (1 sp.), and *Oxygraphis* Bunge (1 sp.); "A synonymic conspectus of the native and garden Thalictrums of North America," 35 species being described. The final paper is entitled "Some preliminary observations on *Dictyophora ravenelii* Burt," by C. S. Scofield, accompanied by three excellent plates, and among the conclusions reached the following is of general interest: "There is in the young mycelial threads very good evidence of the occurrence of cell fusion previous to, or in intimate connection with, the formation of the sporophore."—J. M. C.

NOTES FOR STUDENTS.

NAWASCHIN[41] has recently made a cytological study of *Plasmodiophora brassicae* Woron. Plasmodiophora is a parasitic myxomycete which causes various deformities and distortions in the roots of its host. *P. brassicae* is

[14] Beobachtungen über den feineren Bau und Umwandlung von *Plasmodiophora Brassicae* Woron. im Laufe ihres intracellularen Lebens. Fora 86: 404–427. pl. 20. 1899.